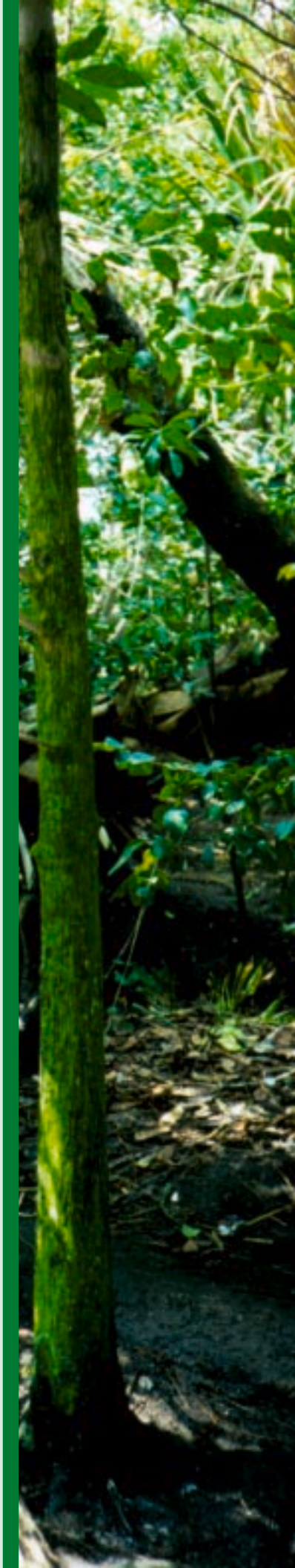
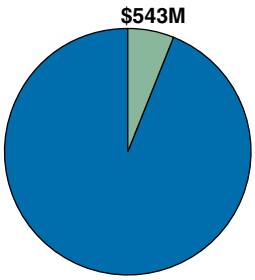
FY 2000 ANNUAL REPORT

PERFORMANCE RESULTS

SECTION II



Goal 1 FY 2000 Obligations



Note: EPA FY 2000 Obligations were $8,974 million

GOAL 1: CLEAN AIR

The air in every American community will be safe and healthy to breathe. In particular, children, the elderly, and people with respiratory ailments will be protected from health risks of breathing polluted air. Reducing air pollution will also protect the environment, resulting in many benefits, such as restoring life in damaged ecosystems and reducing health risks to those whose subsistence depends directly on those ecosystems.

OVERVIEW

Exposure to air pollution at certain levels is associated with numerous harmful effects to human health, including premature death, respiratory problems, heart and lung diseases, and cancer and other serious health effects such as reproduction or birth defects. Children may be at greater risk than adults because they are more active outdoors and their lungs are still developing. Senior citizens are also more sensitive to air pollution because they often have heart or lung diseases. EPA and its partners have made significant progress in protecting the health of people of all ages by dramatically reducing air pollution from various sources.

Air pollution, such as acid rain, ground-level ozone, and air toxics, can also significantly affect ecosystems. For example, EPA has estimated that ground-level ozone reduces agricultural and commercial forest yields by $500 million each year. Airborne release and subsequent deposition of nitrogen oxide (NO_x) is one of the largest sources of nitrogen pollution in certain water bodies, such as the Chesapeake Bay. Overly abundant nitrogen can cause excessive growth of algae, which in turn can harm fish and shellfish and reduce the light available to aquatic vegetation and coral reefs.

CLEAN AIR EFFORTS IN INDIAN COUNTRY

EPA has built on its partnership with tribal governments and has made achievements in many areas, including providing resources to tribes to work on air quality planning, management, and control. More than 100 tribes now receive Clean Air Act funding. Sixty-seven tribes are actively involved in ambient monitoring, at least 30 are developing emissions inventories, 27 are working with EPA on major source permitting, 35 are conducting education and outreach activities, and several are actively participating in Regional Planning Organizations as they work to address regional haze. Also, in FY 2000 the tribes, Northern Arizona University Institute for Tribal Environmental Professionals, and EPA launched a new Tribal Air Monitoring Support Center in Las Vegas that will assist with building monitoring capacity among tribes.

FY 2000 PERFORMANCE

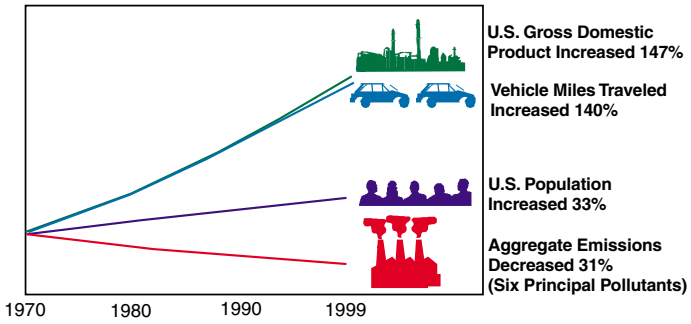
EPA devotes significant effort to meeting annual targets that support the longer term health and environmental outcomes and improvements that are articulated in the Clear Air goal. To achieve the goal of healthy clean air, EPA relies on the proactive cooperation of federal, state, local and tribal government agencies, industry, non-profit organizations, and individuals. Success is far from guaranteed even with the full participation of all stakeholders. Moving into the 21st century, EPA will be working with various stakeholders to encourage new ways to meet the challenges of "cross-regional" issues as well as to integrate programs to address holistically airborne pollutants.

Reducing Emissions of Criteria Pollutants

Under the Clean Air Act (CAA), EPA establishes National Ambient Air Quality Standards (NAAQS) to protect human health, including the health of "sensitive" populations like asthmatics, children, and senior citizens. EPA also sets limits to protect public welfare, including protecting against degradation of ecosystems, vegetation, crops, and materials and preventing visibility impairment.

EPA has set national air quality standards for six principal pollutants (referred to as criteria pollutants): carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone, particulate matter (PM), and sulfur dioxide (SO_2). Between 1970 and 1999, total emissions of the six principal air pollutants decreased 31 percent [state core performance measure (CPM) for all six criteria pollutants]. These improvements occurred simultaneously with significant increases in the nation's population, economic growth, and travel and are a result of effective implementation of clean air laws and regulations, as well as enhancements in the efficiency of industrial technologies.

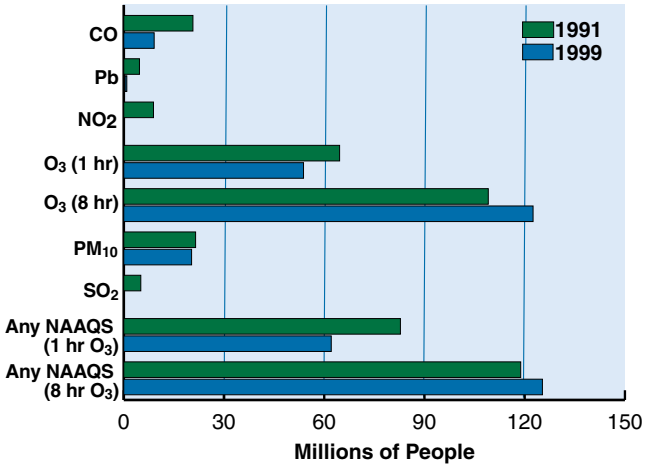
Trends in Emission Sources and NAAQS Pollution Emissions



Further improvements in air quality are expected with the implementation of new regulations for passenger vehicles and trucks. In FY 2000 EPA finalized a rule for passenger vehicles, including sport utility vehicles, that requires these vehicles to be 77 to 95 percent cleaner for NO_x (a contributor to ground level ozone or smog, and nitrogen deposition in water bodies). The rule takes effect beginning with model year 2004 and will reduce NO_x by nearly 3 million tons per year by 2030. A rule for trucks, when fully implemented in 2030, will reduce NO_x emissions by 2.6 million tons per year.

In FY 2000 as the result of sustained improvements in air quality and the fulfillment of other CAA requirements, 13 additional areas, with a population of 5.2 million people, were found to have improved air quality enough to meet at least one of the standards for the criteria pollutants (some CPMs for criteria pollutants). Despite this progress in air quality improvement, more than 62 million people still live in counties with monitored pollution levels that do not meet one or more national air quality standards (this number does not consider the 8-hour ozone standard). To address the persistent air pollution problems in those areas, EPA is working with the states, tribes, and local governments on additional strategies and has proposed a program to control regional haze, which is largely caused by particulate matter.

Population in Counties with Monitored Levels of Pollutants Above the NAAQS



EPA and the states are continuing their multi-year effort to address the ozone transport problem by moving forward with plans to reduce NO_x emissions in the eastern portion of the country. In FY 1999 EPA finalized the "NO_x State Implementation Plan (SIP) call," requiring states in the eastern portion of the United States to submit SIPs that reduce emissions of NO_x. In March 2000 a decision by the U.S. Court of Appeals for the District of Columbia Circuit largely upheld the NO_x SIP call, remanding only a few issues back to EPA. In FY 2000 EPA developed a plan to implement the NO_x SIP call in accordance with the court decision. Nineteen states and the District of Columbia were required to submit, by October 30, 2000, plans achieving approximately 90 percent of the emission reductions required by the original NO_x SIP call.

In FY 2001 EPA plans to begin the rulemaking process on the remanded issues. Full implementation of this SIP call, considering the intended revisions, would reduce total NO_x emissions by nearly 1 million tons annually. In FY 2000, as a back-up to the NO_x SIP call, EPA granted petitions filed by four northeastern states seeking to reduce ozone pollution through reductions in NO_x emissions from other states. EPA is currently awaiting a decision from the D.C. Circuit regarding the legality of granting these petitions. The ozone pollution reductions from these actions will

provide cleaner air for more than 100 million people. In addition, these two actions will reduce acid rain and visibility problems. They will also protect water quality by reducing the amount of nitrogen deposition in water bodies.

In FY 2000 EPA continued the litigation on the legality of the July 1997 ozone and fine particle standards. The Supreme Court granted EPA's request for review of the D.C. Circuit decision that remanded the standards to EPA and heard oral arguments on November 7, 2000. The Court is expected to decide the case by the middle of 2001. Because of the litigation, EPA did not take any steps to implement the 8-hour ozone standard in FY 2000, although EPA is working with the states to determine appropriate boundaries for areas that are not attaining the 8-hour standard. To ensure a minimal, federally enforceable level of human health protection against ozone pollution, EPA reinstated the pre-1997 1-hour ozone standard in the summer of 2000.

The litigation has not affected efforts related to the fine particle standard. As was scheduled, EPA is working with states to collect data from the new fine Particle Monitoring Network to determine fine particle levels across the country. EPA is also continuing its review of the scientific studies on the health effects of fine particles for the 5-year review of the standard that is required by the CAA. EPA has stated that it intends to complete both efforts before beginning implementation of the fine particle standard.

In FY 2000 EPA also conducted various planning activities to support implementation of the regional haze rule by the states and tribes. The first state plans for reducing regional haze are due in the 2003 to 2008 time frame with full implementation expected by 2018. Regional haze, due to the presence of fine particles in air that scatter and absorb light effectively, impairs visibility over a large area. The Agency's activities include developing technical tools and guidance, expanding the Interagency Monitoring of Protected Visual Environments visibility monitoring network, providing funding and developing work plans for five regional planning bodies, and conducting specific work with the Western Regional Air Partnership on an annex to the recommendations of the Grand Canyon Visibility Transport Commission. These activities will help states achieve the national visibility goal Congress established when it amended the CAA in 1977.

Monitoring and Controlling Air Toxics

Toxic air pollutants are those pollutants that cause or might cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental and ecological effects. Some common toxic air pollutants are benzene (found in gasoline), perchloroethylene (emitted from some dry cleaning facilities), and methylene chloride (used as a solvent in some industries). Most air toxics originate from man-made sources, including mobile sources (e.g., cars, trucks, buses, construction equipment), stationary sources (e.g., factories, refineries, power plants), and indoor sources (e.g., building materials and some cleaning compounds). Air toxics are also released from natural sources like volcanic eruptions and forest fires.

Unlike the criteria pollutant program, an extensive nationwide monitoring network for air toxics does not yet exist. In FY 1999, however, EPA, with the assistance of state and local co-regulators, began developing a national strategy for monitoring toxic air pollutants. The Agency is beginning to implement that strategy. Specifically in FY 2000 EPA, the states, tribes, and local governments worked to develop criteria for monitoring and analyzing ambient air toxics. In addition four urban area pilot projects—Providence, Detroit, Tampa, and Seattle—were funded and they are expected to operate for 1 year. Six small city/rural pilot projects will also be established. This pilot phase, which was reviewed by the Agency's Science Advisory Board, is part of a larger, multiyear program to be used to generate information on the variability of ambient air toxics over time and geographic areas to guide the proper deployment of an air toxics monitoring network.

In addition the Agency is conducting a four-step National-Scale Air Toxics Assessment, as part of the Integrated Urban Air Toxics Strategy, that will focus on the 33 air toxics that present the greatest threat to human health in the largest number of urban areas. The assessment results can then be used to identify the areas of the country and pollutants for which further investigation is needed. The first two steps, completed in FY 2000, were to compile a national inventory of air toxics emissions from outdoor sources and to estimate ambient concentrations of air toxics across the contiguous United States using data from 1996. The last two steps, to be completed in early 2001 for peer review, are to estimate population exposures across the contiguous United States and to characterize potential

human health risk due to inhalation of air toxics, including both cancer and noncancer effects.

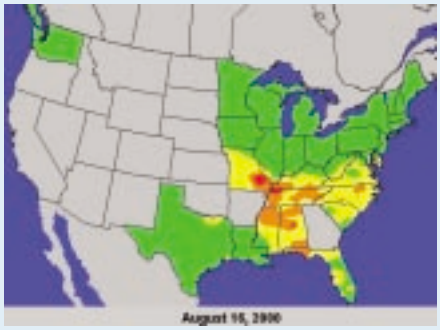
EPA has put in place important controls covering air toxics from fuels and engines and is continuing to take additional steps to reduce air toxics from vehicles. EPA anticipates that by 2020 there will be a 75 percent emissions reduction in key air toxics from highway vehicles from 1990 levels. In particular in FY 2000 the Agency finalized the rule that sets the standards for the next generation of cleaner-burning engines and gasoline for passenger vehicles, including sport utility vehicles, and finalized a similar rule for cleaner heavy-duty trucks and buses and their fuel. EPA also introduced a voluntary diesel retrofit program that encourages states, cities, and private companies to use modern emissions control technology on their older diesel engines, which can remain operable for 20 to 25 years. Two pilot retrofit projects are under way in Seattle and Washington, DC, and three more projects are planned. In addition to reducing air toxics, these regulatory and voluntary efforts will also reduce criteria pollutants.

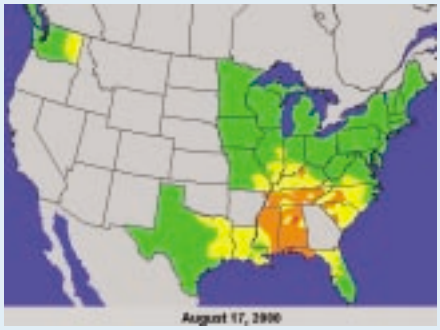
Another program, the reformulated gasoline (RFG) program is helping to reduce pollution in the metropolitan areas of the country with the most difficult air quality problems. In 1995 EPA began work with the states to implement a two phased RFG program using gasoline blends to burn fuel more cleanly. During Phase I, which ended in 1999, emissions of benzene (a known human carcinogen) were reduced in major metropolitan areas by as much as 43 percent. Phase II, which began on January 1, 2000, should reduce vehicle emissions of volatile organic compounds by 27 percent, air toxics emissions by 22 percent, and NO_x emissions by seven percent (**http://www.epa.gov/oms/**). Phase II will also reduce toxic emissions by about 24,000 tons per year in RFG areas, equivalent to eliminating the toxic emissions from more than 13 million vehicles. EPA estimates that the Phase I and Phase II RFG program will reduce smog pollutants by 105,000 tons per year, equivalent to eliminating the smog-forming emissions from more than 16 million vehicles. About 75 million people in 17 states are breathing cleaner air because of the RFG program.

EPA is nearing the end of the first phase of the two-phase process for regulating stationary source air toxic emissions that Congress established in the 1990 Amendments. In the first phase, air toxic emissions are to be reduced by requiring industry to do what is doable:

In a program that combines EPA's commitment to accurate, timely environmental information with cutting edge technology, AIRNOW displays the smog levels throughout the day and tracks changes hour by hour. AIRNOW presents the information in easy-to-understand maps. "Real-time" data are available for 35 states and Washington DC. Air pollution forecasts for 135 cities appear in *USA Today* and on the Weather Channel. The goals of EPA's AIRNOW web site are to (1) provide real-time air pollution data in an understandable, visual format; (2) provide information about health and environmental effects of air pollution; (3) provide the public with information about ways in which they can protect their health and actions they can take to reduce pollution (**http://www.epa.gov/airnow**).

National Air Quality Maps
August 16, 2000 and August 17, 2000





EPA was required to set industry-wide standards based on pollution control equipment that is already in use. In FY 2000 the Agency proposed eight of these Maximum Achievable Control Technology (MACT) standards covering 12 types of emission sources. The Agency also issued three final MACT standards for four source categories. These rules will reduce toxic emissions by an estimated 62,000 tons each year when fully implemented; together, once fully implemented, the toxics standards issued over the past 10 years will cut emissions of toxic air pollutants by nearly 1.5 million

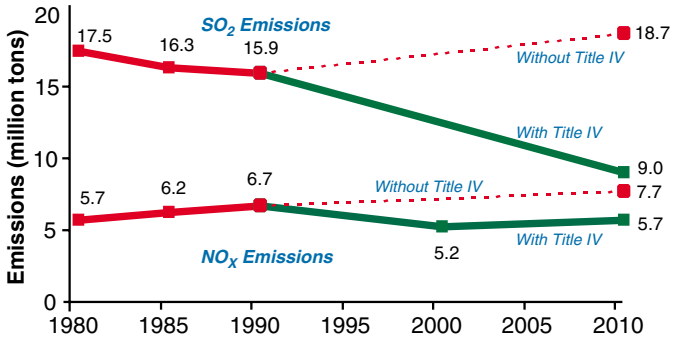
tons per year. EPA is also beginning the second phase of the two-phase process – determining whether there are remaining risks that require additional controls. In FY 2000 the Agency conducted 12 screening risk assessments on previously promulgated 2- and 4-year MACT standards and concluded that four source categories will need further assessments to determine whether additional regulations are needed. In December 2000 EPA issued a finding that mercury emitted from power plants is a human health concern. This triggered a requirement to issue a rule by 2004 to regulate mercury emissions from power plants.

Reducing Acid Rain

Acidic deposition or "acid rain" occurs when emissions of SO_2 and NO_x in the atmosphere react with water, oxygen, and oxidants to form acidic compounds. These compounds fall to earth in a dry form (gas and particles) or a wet form (rain, snow, and fog). Major human health concerns associated with exposure to fine particles include effects on breathing and the respiratory system, damage to lung tissue, and premature death. In the environment, acid rain raises the acid levels in certain soils and water bodies, making the water unsuitable for some fish and other wildlife; it also damages certain trees at some higher elevations. Acid rain is carried by the wind, sometimes across state and national borders. "In the United States, prior to the implementation of the NO_x SIP call (which will not begin until 2004), electric utility plants that burn fossil fuels produce about 64 percent of annual SO_2 emissions and 26 percent of NO_x emissions.

The Acid Rain Program, as authorized by the Clean Air Act, is being implemented in two phases: Phase I for SO_2 began in 1995 and targeted the largest and highest-emitting power plants, predominantly coal-fired units; Phase I for NO_x began in 1996. As the chart indicates, the programs have significantly reduced emissions from the 1990 baseline. Phase II for both pollutants began in 2000. The Acid Rain Program now covers more than 2,500 units and includes gas-, oil-, and coal-fired units. The Phase II units installed continuous emissions monitors and began reporting emissions to the Acid Rain Program in 1995. Required reporting of emissions from all affected units was needed for EPA to assess utilities' compliance with the program's reduced utilization provisions. It also ensured a smooth start-up of Phase II in 2000, when all affected units became subject to SO_2 emission reductions. Most coal-fired Phase II units also became subject to NO_x emission reductions in 2000. The transition to full program operation has progressed smoothly. In addition, the computer-based Allowance Tracking and Emissions Tracking Systems, which support the program and were enhanced in FY 2000, will be expanded in the next several years to support operations of the Ozone Transport Commission's NO_x Budget/ Multistate Emissions Trading Program in the Northeast.

Reductions in SO_2 and NO_x Emissions from Utility Sources Following CAA Title IV Implementation



SUMMARY OF FY 2000 PERFORMANCE

EPA has made significant progress toward achieving its long-term goal of clean air for all Americans through successful and collaborative integration of regulatory and partnership activities. Final rules setting standards for cleaner burning engines and fuels, final rules for passenger vehicles including sports utility vehicles, proposal of eight and issuance of three MACT standards, and expansion of the universe of electric utility plants covered under the Acid Rain program all highlight the Agency's movement toward meeting its strategic clean air goal.

RESEARCH CONTRIBUTIONS

Criteria Pollutants

In FY 2000 EPA completed key research on an atmospheric model (the Community Multi-scale Air Quality model, or Models-3/CMAQ) that will allow state, tribal, and local air quality managers to more accurately forecast the benefits of alternative ozone, PM, and regional haze source controls. Models-3/

CMAQ simultaneously looks at ozone, PM, visibility, acid rain, and some toxics, as an aid in evaluating control strategies for one or several ozone precursors. EPA offices and regions are working together to encourage states to use the model for upcoming SIPs.

EPA continues to work with state and local agencies in all areas to develop strategies to help them maintain clean air or come into compliance while being sensitive to local economic and other issues. The Agency is required to examine the NAAQS every 5 years to ensure that they are protective of human health. Currently, EPA is working toward completing a review of the ozone and $PM_{2.5}$ standards by 2002. In addition, the draft plan for the Ozone Air Quality Criteria Document (AQCD) is nearly ready for release for public comment and Clean Air Scientific Advisory Committee (CASAC) review. This is an important milestone in the 5-year review of the tropospheric ozone NAAQS set by the Agency.

EPA leads research efforts to characterize human exposures to PM and to evaluate the biological mechanisms behind PM's respiratory and cardiovascular effects. PM-related research in FY 2000 included assessments to determine the best means to estimate health outcomes and the susceptibility of sensitive subgroups, including children and senior citizens. A recently completed exposure study indicates that exposure of senior citizens to PM creates health risks. Research in FY 2000 also included the evaluation of the role of various components of PM, such as transition metals, in producing toxicity. EPA is also conducting research to evaluate, improve, and develop control technologies for industrial and commercial sources. Results of these efforts will ensure that the Agency's review of the PM standard is based on the most up-to-date scientific standards available. Additional research focuses on measurements, methods, and models to support the review of the PM standard, including the evaluation of the Models-3/CMAQ model for PM, which the states can use to predict which reductions in emissions sources will likely achieve attainment of PM NAAQS. Also, in FY 2000, work continued on the second External Review Draft of the PM AQCD which will be released shortly for public comment and CASAC review.

Air Toxics

In FY 2000 EPA's air toxics research program developed and demonstrated new methods to assess risks from urban toxics and conducted research to develop integrated control and pollution prevention approaches for source categories (such as utilities, waste combustors, and industrial boilers) that have the greatest adverse effect on urban air quality. Results of this research will support the Agency's efforts to develop strategies to reduce the risks posed by the multitude of hazardous air pollutants present in many urban areas across the United States.

PROGRAM EVALUATION

The Benefits and Costs of the Clean Air Act (CAA). The CAA requires the Agency to complete periodic evaluations of the impact of the program. An EPA report to Congress entitled, *The Benefits and Costs of the Clean Air Act* (November 1999), estimated the benefits and costs of the 1990 Amendments (**http://www.epa.gov/air/sect812/**). The Agency has begun the process to update this report.

Air Pollution: Status of Implementation and Issues of the CAA Amendments of 1990. In response to a request from Congress, the General Accounting Office (GAO) issued a report (RCED-00-72) on the status of implementation of Titles I through VI of the 1990 CAA Amendments. This evaluation indicated that of the 538 requirements in those titles with deadlines prior to February 2000 or with no statutory deadlines, EPA met 409 requirements and the statutory deadline for 129 requirements. As part of the evaluation, GAO obtained views from stakeholders on what they considered the key issues regarding implementation of the 1990 Amendments. The stakeholders—state governments, local programs, industries, and environmental advocacy groups—often cited the following issues: the degree of flexibility allowed states and the regulated community to determine how they will achieve air quality improvements, the extent to which goals and requirements are clearly specified in the statute or regulations, and the adequacy of resources at the state and local levels to effectively implement and enforce the statute. This information will be considered in the reauthorization of the CAA. (**http://www.gao.gov/new.items/rc00072.pdf**).

EPA's Mobile Source Emissions Factor Model. In 1998 in response to a request from Congress, the National Academy of Sciences established a committee to evaluate and develop recommendations for improving

EPA's mobile source emissions factor model, MOBILE. MOBILE is an EPA-developed model used by environmental and transportation agencies for estimating emissions from on-road motor vehicles for air quality planning purposes. In FY 2000 the committee issued its report, which included a number of recommendations for enhancing MOBILE and for improving the overall process for estimating mobile source emissions. EPA is addressing the recommendations as it develops a new version of MOBILE, which should be ready in 2001.

ASSESSMENT OF IMPACTS OF FY 2000 PERFORMANCE ON FY 2001 ANNUAL PERFORMANCE PLAN

Goal 1 Annual Performance Goals (APGs) for FY 2001 reflect successful performance in FY 2000. For example, the FY 2001 APG for reduction in PM reflects achievement of the FY 2000 goal by an increase in the number of areas in which healthy air is maintained and the associated population in those areas newly designated as meeting the PM standards. This is also the case for the CO_2, SO_2, NO_2, and lead reduction program. In setting APGs and targets for future years, the Agency will focus on developing outcome-based program goals where possible. Two areas in which the Agency currently has good outcome-based APGs are the NO_x and SO_2 reduction programs, which are able to measure emission reductions.

Performance in FY 2000 also impacts broad program strategies for future years. The CAA provides a framework for achieving environmental results by setting specific targets for each program area. The Act identifies specific activities and establishes a multiyear schedule for carrying them out. Nationally thousands of air quality monitors provide the information that is the foundation for measuring program success. EPA has a wealth of trend data collected over 30 years for criteria pollutants; the Agency is now working toward a similar network for toxic pollutants. Building on the FY 2000 strategy developed with the states, EPA will work toward the deployment of a multi-year effort to generate information on the variability of air toxics over time and geographic area.

TABLES OF RESULTS

The following tables of results includes performance results for the eight FY 2000 APGs that appear in Goal 1. In cases where the FY 2000 APG is associated with an FY 1999 APG, the table includes the FY 1999 APG below the FY 2000 APG for ease in comparing performance. Where applicable, the tables note cases where FY 2000 APGs are supported by state National Environmental Performance Partnership System (NEPPS) and CPMs. As described in more detail in Section I of the report (the Overview and Analysis), states use CPMs to evaluate their progress toward mutual program goals. Additionally, EPA is providing information on FY 1999 APGs for which data were not available when the FY 1999 report was published.

Summary FY 2000 Performance
5 Goals Met | 0 Goals Not Met | 3 Other

GOAL 1 - CLEAN AIR

FY 2000 ANNUAL PERFORMANCE GOALS AND MEASURES		FY 2000 Planned	FY 2000 Actual	FY 1999 Actual
BY 2010, IMPROVE AIR QUALITY FOR AMERICANS LIVING IN AREAS THAT DO NOT MEET NAAQS FOR OZONE AND PARTICULATE MATTER.				
FY 2000 APG 1:	**Maintain healthy air quality for 33.4 million people living in 43 areas attaining the ozone standard.** ➧ Corresponds with FY 2000 NEPPS Core Performance Measure (CPM).	**33.4 M**	**33.4 M**	**10**
(FY 1999)	*Eight additional areas currently classified as non-attainment will have the 1-hour ozone standard revoked because they meet the old standard.*			
Explanation:	Goal met. Maintained healthy air quality for 33.4 million people living in 43 areas meeting the ozone standard. One new area came into attainment and increased the number of people living in areas attaining the ozone standard by 1.7 million, resulting in a total of 35.1 million people living in a total of 44 areas designated to attainment.			
Data Source:	The Aerometric Information Retrieval System (AIRS) is composed of two systems: Air Quality Subsystem (AQS), which stores ambient air quality data to determine if nonattainment areas have the three years of clean air data needed for redesignation and Air Facility Subsystem which stores emissions and compliance/enforcement information for facilities. AIRS data are collected from the state and Local Air Monitoring Stations. The Findings and Required Elements Data System (FREDS) is used to track progress of states and regions in reviewing and approving the required data elements of the State Implementation Plan (SIP). SIPs define what action a state will take to improve the air quality in areas that do not meet national ambient air quality standards.			
Data Quality:	Each State and Local Air Monitoring Station (SLAMS) is required to (1) meet network design and siting criteria, (2) provide adequate quality assurance assessment, control, and corrective actions functions, (3) ensure all sampling methods and equipments meet EPA reference or equivalent requirements, and (4) follow acceptable data validation and record keeping procedures. SLAMS are summarized and reported annually to EPA. SLAMS undergo system audits to review the overall air quality data collection activity for any needed changes or corrections. For AIRS potential data limitations are (1) incomplete or missing data, (2) inaccuracies due to imprecise measurement and recording, and (3) inconsistent or non-standard methods of data collection and processing. No external audit of AIRS has been done in the last three years. For FREDS the primary limitation is incomplete or missing data from the Regions. No external audit has been done on FREDS.			
FY 2000 APG 2:	**Maintain healthy air quality for 1.2 million people living in 7 areas attaining the PM standards, and increase by 60 thousand the number of people living in areas with healthy air quality that have attained the standard.** ➧ Corresponds with FY 2000 NEPPS CPM.	**1.2 M 60,000**	**1.2 M 75,800**	**1,110**
(FY 1999)	*Deploy particulate matter 2.5 ambient monitors including mass, continuous, speciation, and visibility resulting in a total of 1,500 monitoring sites.*			
Explanation:	Goal met. Maintained healthy air quality for 1.2 million people living in seven areas attaining the particulate matter (PM) standard. Two new areas came into attainment and increased the number of people living in areas attaining the PM standard by 76 thousand, resulting in a total of 1.276 million people living in a total of nine areas designated to attainment.			
Data Source:	Same as FY 2000 APG 1.			
Data Quality:	Same as FY 2000 APG 1.			

FY 2000 ANNUAL PERFORMANCE GOALS AND MEASURES	FY 2000 Planned	FY 2000 Actual	FY 1999 Actual
FY 2000 APG 3: **Provide new information on the atmospheric concentrations, human exposure, and health effects of particulate matter (PM), including PM 2.5, and incorporate it and other peer-reviewed research findings in the Second External Review Draft of the PM AQCD for NAAQS Review.**			
(FY 1999) *Identify and evaluate at least two plausible biological mechanisms by which particulate matter (PM) causes death and disease in humans.*			2
Performance Measures			
- Hold CASAC Reviewof draft PM Air Quality Criteria Document (AQCD).	9/30/00 1	9/30/00 1	
- Longitudinal Panel Study on exposure of susceptible sub-populations to PM.			
- PM Monitoring Study Data.	9/30/00 1	9/30/00 1	
- Baltimore Study on Response of Elderly to PM.			
Explanation: Goal met. A tremendous amount of new research on atmospheric concentrations, exposures, and health effects of PM was published in FY 2000. This research and the results of the FY 2000 Clean Air Scientific Advisory Committee (CASAC) review of the first draft of the PM AQCD are being incorporated into the second External Review Draft of the PM AQCD for National Ambient Air Quality Standards (NAAQS) review. FY 2000 research products included publication of data generated from PM monitoring studies that reduce uncertainties on atmospheric PM concentrations and publication of a first generation exposure model for PM of ambient origin. Research also examined ways to estimate the susceptibility of sensitive subgroups, specifically through a longitudinal study on exposure to PM and a study on the response of the elderly to PM.			
Data Source: Agency generated material.			
Data Quality: As required by the Agency-wide formal peer review policy issued in 1993, and reaffirmed in 1994 and 1998, all major scientific and technical work products used in Agency decision-making are independently peer reviewed before their use. EPA has implemented a rigorous process of peer review for both its in-house and extramural research programs. Peer review panels include scientists and engineers from academia, industry and other federal agencies.			
BY 2010, REDUCE AIR TOXIC EMISSIONS BY 75 PERCENT FROM 1993 LEVELS TO SIGNIFICANTLY REDUCE THE RISK TO AMERICANS OF CANCER AND OTHER SERIOUS ADVERSE HEALTH EFFECTS CAUSED BY AIRBORNE TOXICS.			
FY 2000 APG 4: **Air toxic emissions nationwide from both stationary and mobile sources combined will be reduced by 3% from 1999 (for a cumulative reduction of 30% from the1993 levels of 4.3 million tons.)** ➪ Corresponds with FY 2000 NEPPS CPM.	3%	Data available in FY 2004	
(FY 1999) *Reduce air toxic emissions by 12% in FY 1999, resulting in cumulative reduction of 25% from 1993 levels.*			Data available mid-2001
Explanation: FY 2000: FY 2000 data will not be available until 2004 due to time lags associated with reporting and analysis. FY 2000 Target: 3%. Estimated Actual: 9%, from a revised baseline of 5.9 million tons. The Agency expects to exceed the FY 2000 annual performance goal primarily due to compliance with the large municipal waste combustion rule. The estimated 9% reduction in FY 2000 would result in a cumulative reduction of 32% from 1993 levels. These estimated reductions are calculated on the expected reduction from rules becoming effective on emission sources in FY 2000. Actual emission inventory information from the FY 2002 National Toxics Inventory (NTI) will be available in mid-2004.			
FY 1999: FY 2000 data will not be available until 2001 due to time lags associated with reporting and analysis. FY 1999 Target: 12%. Estimated Actual: 10%, from a revised baseline of 5.9 million tons. The target of 12% was calculated against a baseline of 4.3 million tons in 1993. Analysis of the			

FY 2000 ANNUAL PERFORMANCE GOALS AND MEASURES	FY 2000		FY 1999
	Planned	Actual	Actual
1996 NTI indicates that the baseline for 1993 is actually 5.9 million tons. Although emission reduction targets were exceeded, this translates into a smaller percentage reduction of the increased baseline (estimates for FY 1999 indicate a 14% reduction in air toxic emissions from the 4.3 million ton baseline). The estimated 10% reduction in FY 1999 would result in a cumulative reduction of 23% from 1993 levels. These estimated reductions are calculated on the expected reduction from rules becoming effective on emission sources in FY 1999. Actual emission inventory information from the FY 1999 NTI will be available in mid-2001.			
Data Source: The NTI is a database that houses information from other primary sources. For base year 1993 the system includes emissions information for 188 hazardous air pollutants from more than 900 stationary sources. The 1996 NTI contains facility-specific estimates from state and local data supplemented with data collected during the development of the Maximum Achievable Control Technology standards and Toxic Release Inventory data. It also includes emissions from large industrial or point source, smaller stationary area sources, and mobile sources.			
Data Quality: Because NTI is primarily a database to house information from other primary sources, most of the quality assurance and control efforts focus on identifying duplicate data from the different data sources and supplementing missing data. There has been no effort to validate information collected from other databases, but a significant effort is underway to determine the best primary source data in cases where a discrepancy among data sources is found. Mobile source data are validated by using speciated test data from the mobile source emission factor program, along with peer-reviewed models which estimate national tons for the relevant year. Because of the different data sources, not all information in the NTI has been compiled using identical methods. Also, for the same reason, there are likely some geographic areas with more detail and accuracy than others. Each base year's NTI has been reviewed by internal EPA staff, state and local agencies, and industry.			
FY 2000 APG 5: **Provide new information and methods to estimate human exposure and health effects from high priority urban air toxics, and complete health assessments for the highest priority hazardous air pollutants (including fuel/fuel additives).**			
(FY 1999) *Complete health assessments for five air toxics as high priority.*			4
Performance Measures			
- Produce process & framework for incorporating Acute Reference Exposure values in Integrated Risk Information System (IRIS).	9/30/00	9/30/00	
- Submit for Agency Review Three Toxicological Reviews and Assessments.	3	2	
Explanation: Goal met. Reports have been published that provide important methods and data on high priority hazardous air pollutants, including the most potent carcinogenic environmental polycyclic aeromatic hydrocarbon (PAH) yet discovered, dibenzo [a,l]pyrene. For non-cancer endpoints new risk assessment guidance for assessing health risks from acute exposures has been developed, and research results on relationships between exposure concentration and duration have been published. Evaluation of dose-response relationships for several chemicals have been completed, as have fuel/fuel additives reviews, activities that will support the residual risk, mobile sources, and National Air Toxics Assessments evaluations and rulemakings. EPA submitted two assessments for consensus review: vinyl chloride (IRIS review completed) and hexachlorocyclopentadiene (in IRIS consensus review) while the third assessment (quinoline and methyl chloride) was delayed and submitted for consensus review during the first quarter of FY 2001.			
Data Source: Same as FY 2000 APG 3.			
Data Quality: Same as FY 2000 APG 3.			

FY 2000 ANNUAL PERFORMANCE GOALS AND MEASURES		FY 2000		FY 1999
		Planned	Actual	Actual
BY 2005, IMPROVE AIR QUALITY FOR AMERICANS LIVING IN AREAS THAT DO NOT MEET THE NAAQS FOR CARBON MONOXIDE, SULFUR DIOXIDE, LEAD, AND NITROGEN DIOXIDE.				
FY 2000 APG 6:	**Maintain healthy air quality for 27.7 million people living in 46 areas attaining the CO, SO_2, NO_2, and Lead standards, and increase by 1.1 million the number of people living in areas with healthy air quality that have attained the standard.** ➧ Corresponds with FY 2000 NEPPS CPM.	**27.7 M 1.1 M**	**27.7 M 3.41 M**	
(FY 1999)	*Certify that 14 of the 58 estimated remaining nonattainment areas have achieved the National Ambient Air Quality Standards (NAAQS) for carbon monoxide, sulfur dioxide, or lead.*			**13**
Explanation:	Goal met. Maintained healthy air quality for 27.7 million people living in 46 areas meeting the carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2) and Lead standards. Ten new areas came into attainment and increased the number of people living in areas attaining the standards by 3.4, million resulting in a total of 31.1 million people living in a total of 56 areas designated to attainment.			
Data Source:	Same as FY 2000 APG 1.			
Data Quality:	Same as FY 2000 APG 1.			
BY 2010, AMBIENT SULFATES AND TOTAL SULFUR DEPOSITION WILL BE REDUCED BY 20-40% FROM 1980 LEVELS DUE TO REDUCED SULFUR DIOXIDE EMISSIONS FROM UTILITIES AND INDUSTRIAL SOURCES. BY 2000, AMBIENT NITRATES AND TOTAL NITROGEN DEPOSITION WILL BE REDUCED BY 5-10% FROM 1980 LEVELS DUE TO REDUCED EMISSIONS OF NITROGEN OXIDES FROM UTILITIES AND MOBILE SOURCES.				
FY 2000 APG 7:	**5 million tons of $S0_2$ emissions from utility sources will be reduced from the 1980 baseline.**	**5 million tons**	**Data available in late 2001**	
(FY 1999)	*Maintain 4 million tons of sulfur dioxide (SO_2) emissions reduction from utility sources.*			**5.04 million tons**
Explanation:	Although emissions data are not available until one year after the end of the calendar year, the Agency is on track to achieve the annual performance goal.			
Data Source:	Emissions Tracking System (ETS) receives hourly measurements of SO_2 and nitrogen oxide (NO_x) volumetric flow, carbon dioxide (CO_2), and other emission-related parameters from more than 2,000 facilities affected by Title IV. Continuous Emission Monitoring Systems (CEMS) collect data to measure NO_x and SO_2 emissions at major electric utitlities. Clean Air Status Trends Network (CASTNet) is primarily an eastern, long-term dry deposition network funded and operated by EPA. The database, which is also maintained by EPA, measures sulfate and nitrate dry deposition and meteorological information at approximately 70 active monitoring sites. National Atmospheric Deposition Program (NADP) is a database that provides measurements of sulfate and nitrate wet deposition at approximately 200 active monitoring sites. EPA, along with several other federal agencies, state, and other private organizations, provide funding and support for the system. The database is maintained by the Illinois state Water Survey/University of Illinois.			
Data Quality:	The Agency performs a series of quality assurance tests of CEMS performance. For these tests emissions data are collected under highly structured, carefully designed testing conditions, which involve either high quality standard reference materials or multiple instruments performing simultaneous emission measurements. The resulting data are screened and analyzed using a battery of statistical procedures, including one that tests for systematic bias. If the CEMS fails the bias test, then either the problem is corrected or adjusted to prevent the low bias. CASTNet and NADP have established data quality objectives and quality control procedures for accuracy, precision, and representativeness. These data are intended to establish trends in wet deposition and precipitation chemistry.			

FY 2000 ANNUAL PERFORMANCE GOALS AND MEASURES		FY 2000		FY 1999
		Planned	Actual	Actual
FY 2000 APG 8:	**2 million tons of NO_x emissions from utility coal-fired utility sources will be reduced from the levels before implementation of Title IV of the Clean Air Act Amendments.**	2 million tons	Data available in late 2001	
(FY 1999)	*Maintain 300,000 tons of nitrogen oxides (NO_x) reduction from coal-fired utility sources.*			420,000 tons
Explanation:	Although emissions data are not available until one year after the end of the calendar year, the Agency is on track to achieve the annual performance goal.			
Data Source:	Same as FY 2000 APG 7.			
Data Quality:	Same as FY 2000 APG 7.			

FY 1999 ANNUAL PERFORMANCE GOALS WITHOUT CORRESPONDING FY 2000 GOALS
(Actual Performance Data Available in FY 2000 and Beyond or Performance Targets Beyond FY 2000)

		Planned	Actual
FY 1999 APG:	**Maintain 4 million tons of sulfur dioxide (SO_2) emissions reduction from utility sources, and maintain 300,000 tons of nitrogen oxides (NO_x) reduction from coal-fired utility sources.**	4 million tons	5.04 million tons
Explanation:	Based on information received in FY 2000, EPA exceeded its FY 1999 target. The Agency surpassed its target of 4 million tons of SO_2 emissions reductions and actually reduced SO_2 emissions from utility sources by 5.04 million tons from the 1980 baseline. The Agency also reduced NO_x from 265 coal-fired utility units by 420 thousand tons, exceeding the goal by 120 thousand tons.	300,000 tons	420,000 tons
Data Source:	Same as FY 2000 APG 7.		
Data Quality:	Same as FY 2000 APG 7.		